

DISK &
TAPE
GENERATION

A stylized graphic of a city skyline in dark blue. It features three main buildings of increasing height from left to right. The tallest building on the right has a vertical column of five small white squares on its side. The middle building has two small white squares near its top and two more near its base. The shortest building on the left is a simple rectangular block.

CITY GAMES



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CITY GAMES

Disk and Tape Generation

CITY I Disk Generation

CITY I simulation model is stored on one 2315 disk cartridge that may be copied directly to another 2315 disk cartridge when two disk drives are available on the IBM 1130 Disk Operating System. The reproduction of a new disk copy consists of three steps which are performed by the same stand-alone utility program called, "Disk Cartridge Utilization Program," (DCIP).

DCIP prepares a new disk for use or provides a new ID to an old disk by initialization. With DCIP loaded, a request for SWO TO INTLZ would allow the operator to turn on switch zero to initialize the new disk. For more details of this process, the reader is referred to the IBM 1130 Disk Monitor System, Version Z, Programmers and Operators Guide, pp. 9-10 to 9-19. Note that the disk ID is a four digit hexadecimal number between 0001 and 7FFF.

To copy the disk DCIP, a request for SW1 TO COPY would enable the copying to begin if the request is satisfied. More details are found on pp. 9-20 to 9-27 of the IBM Manual described above. Should the 1130 systems contain more than two disk drives, be sure that no other system cartridges are enabled during the copying process. If the 1130 system were to have both its current Monitor System programs and the CITY I system programs available simultaneously, the current Monitor System, i.e., Ver. 2, Mod 11, would attempt to update the old system programs which are contained in the CITY I system. During any use of the CITY I cartridge, insure that all other Monitor System Disks are turned off.

The DCIP compare procedure documented on pp. 9-40 and 9-41 of the IBM Manual is used to compare the source cartridge with the object cartridge. In addition, the Dish Utility Program, DUP, provides the DUMPCET option. This option provides a look at the Location Equivalence Tables of both disk cartridges.

The reader is referred to the CITY I Computer Operator's Manual for details on the CITY I System.

CITY IV Tape Generation

The CITY IV simulation model is totally contained on one 2400 magnetic tape that must be copied on a 2316 Disk Cartridge for use on the IBM 360 Operating System. Even the making of multiple tape copies can only be accomplished from the copy that is stored on the disk.

The production of a new tape copy consists of the following three steps using the IBM 360 O.S.

- a) The Labeling Process
- b) The Copying Process
- c) The Testing Process

The 360 O.S. Support Utility Program is involved in each of the processes, which can be compiled as steps in the same job or as separate jobs.

The Labeling program utilizes the utility program named, IEHINITT. The JCL listing in Figure 1 is all that is required for this step. This sequence is used each time one or more tapes are to be labelled. The only change is the last card or label control card. The label control card, "LABEL INITT SER = CTY401", is changed to reflect the new label. In other words, change CTY401 to CTY403 or any other six digit number preferably in this sequence. CTY401 is symbolic of the first tape copy of the CITY IV program. The only other change is with, "OWNER='GUILAND'". The program I.D. is truncated to a maximum of 10 characters including blanks within apostrophies. Thus, 'GUILAND' could be changed to 'P. SMITH'. A separate label control card is needed for each tape to be labelled.

IEHDASDR is used to dump the disk files to the standard labelled tape created above. The assumption is that the CITY IV disk labelled D00160 is available to O.S. 360. A description of the CITY IV installation is provided in the operators manual and a JCL listing of INSTAL describes the process of restoring a dish from the original tape. The tape cannot be made by a tape to tape copying process. The JCL listing of figure 2 describes the required process. The only changes would be the references to the tape. CTY401 must be changed to a new tape serial number. These changes are in the message to the operator:

```
MOUNT TAPE NTIS CTY401 TO
MOUNT TAPE NTIS CTY403
```

also

```
VOLUME = (PRIVATE, , SER = (CTY401)) , etc. is changed to
```

```
VOLUME = (PRIVATE, , SER = (CTY403)) , etc.
```

A repetition of this process is necessary for the production of each new tape copy.

The final step, testing of the tape copy, is not absolutely necessary but highly recommended. IEHLIST is the utility program used to dump the volume table of content of a disk. Therefore, we must first use INSTAL to restore a new scratch disk with the new tape copy. Refer to the Operator's Manual for the details of INSTAL. The JCL listing of figure 3 describes the use of IEHLIST to obtain the UTOC necessary. With this new UTOC, it would be relatively easy to compare it to the original UTOC of the CITY IV system as described in the Operator's Manual.

In most cases, if the copying process with IEHDASDR indicated that:

DUMP TO TAPE IS COMPLETE

HIGHEST RETURN CODE ENCOUNTERED WAS 00

there would be no need for more extensive testing.

The reader is referred to the CITY IV Computer Operator's Manual for more details concerning the CITY IV programs and JCL commands.

```

//***** RBM-SYSTEM JCL LIBRARY *****
//*      THE FIRST STEP LABEL2 LABELS THE TAPES WITH THE SERIAL
//*      NUMBERS PROVIDED.
//*
//LABEL2   EXEC   PGM=IEHINITT
//SYSPRINT DD   SYSOUT=A
//LABEL    DD   DCB=DEN=2,UNIT=,2400,1,DEFER*
//SYSIN    DD   *
LABEL     TNITT SFR=CTY402,OWNER='GUILAND',NUMBTAPF=1
/*
/**
/**
/** NAME
/**      RBMTAPE
/**
/** FUNCTION
/**      RBMTAPE DUMPS THE DISK SPECIFIED BY DISKNUM=D00160 TO A TAPF
/**      OF YOUR CHOICE ON A 9 TRACK 800BPI DRIVE, AND SPECIFIED BY
/**      TAPENUM=CTYNUM.
/**
/*******
/**      THE NEXT CARD DEFINES THE DISK TO THE OPERATOR.
/*MESSAGE MOUNT DISK D00160
/**      THE DISK D00160 IS THE CITY SYSTEM DISK.
/**      THE NEXT CARD DEFINES THE TAPE TO THE OPERATOR.
/*MESSAGE MOUNT TAPE NTISCTY401
/**      THE TAPE IS THE TAPE OF YOUR CHOICE.
//STEP1   EXEC   PGM=IEHDASDR
//SYSPRINT DD   SYSOUT=A
//THEDISK DD   UNIT=2314,DISP=OLD,
//          VOLUME=)PRIVATE,,SER=D00160*
//TAPE    DD   UNIT=,2400*,DISP=OLD,DSNAME=TAPE,
//          VOLUME=)PRIVATE,,SFR=)CTY401**,DCB=)DEN=2*
//SYSIN   DD   *
DUMP     FROMDD=THEDISK,TODD=TAPE
/*

```

FIGURE 1

***** RBM-SYSTEM JCL LIBRARY *****

*** NAME

*** RBMTAPE

*** FUNCTION

*** RBMTAPE DUMPS THE DISK SPECIFIED BY DISKNUM=D00160 TO A TAPE OF YOUR CHOICE ON A 9 TRACK 800BPI DRIVE, AND SPECIFIED BY TAPENUM=CTYNUM.

*** THE NEXT CARD DEFINES THE DISK TO THE OPERATOR.

***MESSAGE MOUNT DISK D00160

*** THE DISK D00160 IS THE CITY SYSTEM DISK.

*** THE NEXT CARD DEFINES THE TAPE TO THE OPERATOR.

***MESSAGE MOUNT TAPE NTISCTY401

*** THE TAPE IS THE TAPE OF YOUR CHOICE.

//STEP1 EXEC PGM=IEHDASDR

//SYSPRINT DD SYSOUT=A

//THEDISK DD UNIT=2314,DISP=OLD, X

// VOLUME=(PRIVATE,,SER=D00160)

//TAPE DD UNIT=(2400),DISP=OLD,DSNAME=TAPE, X

// VOLUME=(PRIVATE,,SER=(CTY401)),DCB=(DEN=2)

//SYSIN DD *

IEF236I ALLOC. FOR RBMTAPE STEP1

IEF237I 0E2 ALLOCATED TO SYSPRINT

IEF237I 133 ALLOCATED TO THEDISK

IEF237I 281 ALLOCATED TO TAPE

IEF237I 0C2 ALLOCATED TO SYSIN

IEF285I SYS73016.T205719.RF000.RBMTAPE.R0001597 DELETED

IEF285I VOL SER NOS=

IEF285I SYS73016.T205719.RF000.RBMTAPE.R0001598 KEPT

IEF285I VOL SER NOS= D00160.

IEF285I TAPE KEPT

IEF285I VOL SER NOS= CTY401.

IEF285I SYS73016.T205719.RF000.RBMTAPE.R0001599 DELETED

IEF285I VOL SER NOS=

IEF280E K 281,CTY401,RBMTAPE,STEP1

IEF373I STEP /STEP1 / START 74017.1826

IEF374I STEP /STEP1 / STOP 74017.1838 CPU OMIN 48.84SEC MAIN 64K LCS OK

//STEP2 EXEC PGM=IEHDASDR

//SYSPRINT DD SYSOUT=A

//THEDISK DD UNIT=2314,DISP=OLD, X

// VOLUME=(PRIVATE,,SER=D00160)

//TAPE DD UNIT=(2400),DISP=OLD,DSNAME=TAPE, X

// VOLUME=(PRIVATE,,SER=(CTY402)),DCB=(DEN=2)

//SYSIN DD *

IEF236I ALLOC. FOR RBMTAPE STEP2

IEF237I 0E2 ALLOCATED TO SYSPRINT

IEF237I 133 ALLOCATED TO THEDISK

IEF237I 281 ALLOCATED TO TAPE

IEF237I 0C3 ALLOCATED TO SYSIN

IEF285I SYS73016.T205719.RF000.RBMTAPE.P0001600 DELETED

IEF285I VOL SER NOS=

IEF285I SYS73016.T205719.RF000.RBMTAPE.R0001601 KEPT

IEF285I VOL SER NOS= D00160.

IEF285I TAPE KEPT

IEF285I VOL SER NOS= CTY402.

```
IEF285I   SYS73016.T205719.RF000.RBMTAPE.R0001602           DELETED
IEF285I   VOL SER NOS=
IEF280F K 281,CTY402, RBMTAPE,STEP2
IEF373I STEP /STEP2 / START 74017.1838
IEF374I STEP /STEP2 / STOP 74017.1849 CPU 0MIN 47.10SEC MAIN 64K LCS OK
IEF375I JOB /RBMTAPE / START 74017.1826
IEF376I JOB /RBMTAPE / STOP 74017.1849 CPU 1MIN 35.94SEC
```

FIGURE 2

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SYSTEM SUPPORT UTILITIES --- IEHDASDR 20.2

DUMP FROMDD=THEDISK, TODD=TAPE

IEH806I DUMP TO DDNAME=TAPE IS COMPLETE.

IEH839I HIGHEST RETURN CODE ENCOUNTERED WAS 00

```

//RBMVTC   JOB (7800,ENGL,10,1),'GUILAND           ',MSGLEVEL=1,CLASS=E      JOB  62
***MESSAGE D00160
//STEP EXEC PGM=IEHLIST
//SYSPRINT DD SYSOUT=A
//DD1 DD UNIT=2314,VOL=SER=D00160,DISP=OLD
//SYSIN DD *
//
IEF236I ALLOC. FOR RBMVTC STEP
IEF237I OE0 ALLOCATED TO SYSPRINT
IEF237I 134 ALLOCATED TO DD1
IEF237I OC3 ALLOCATED TO SYSIN
IEF285I SYS73163.T111131.RF000.RBMVTC.R0000167 DELETED
IEF285I VOL SER NOS= .
IEF285I SYS73163.T111131.RF000.RBMVTC.R000C168 KEPT
IEF285I VOL SER NOS= D00160.
IEF285I SYS73163.T111131.RF000.RBMVTC.R0000169 DELETED
IEF285I VOL SER NOS= .
IEF373I STEP /STEP / START 73163.1234
IEF374I STEP /STEP / STOP 73163.1238 CPU OMIN 23.52SEC MAIN 46K LCS OK
IEF375I JOB /RBMVTC / START 73163.1234
IEF376I JOB /RBMVTC / STOP 73163.1238 CPU OMIN 23.52SEC

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FIGURE 3

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Supplementary Notes

Abstracts This document contains the instructions for initializing duplicate disks for the CITY I model and duplicate tapes for the CITY IV model.

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